

WHAT IS CLAIMED IS:

- 1 1. A method for identifying a compound that modulates T
2 lymphocyte activation, the method comprising the steps of:
3 (i) contacting the compound with a TRAC1 polypeptide or a fragment
4 thereof, the polypeptide or fragment thereof encoded by a nucleic acid that hybridizes
5 under stringent conditions to a nucleic acid encoding a polypeptide having an amino acid
6 sequence of SEQ ID NO:1; and
7 (ii) determining the functional effect of the compound upon the TRAC1
8 polypeptide.
- 1 2. The method of claim 1, wherein the functional effect is measured
2 *in vitro*.
- 1 3. The method of claim 2, wherein the functional effect is a physical
2 effect.
- 1 4. The method of claim 2, wherein the functional effect is a chemical
2 effect.
- 1 5. The method of claim 4, wherein the functional effect is determined
2 by measuring ligase activity.
- 1 6. The method of claim 1, wherein the polypeptide is expressed in a
2 host cell.
- 1 7. The method of claim 6, wherein the functional effect is a physical
2 effect.
- 1 8. The method of claim 6, wherein the functional effect is a chemical
2 or phenotypic effect.
- 1 9. The method of claim 6, wherein the host cell is primary T
2 lymphocyte.
- 1 10. The method of claim 6, wherein the host cell is a cultured T cell.
- 1 11. The method of claim 10, wherein the host cell is a Jurkat cell.

1 12. The method of claim 6, wherein the chemical or phenotypic effect
2 is determined by measuring CD69 expression, intracellular Ca^{2+} mobilization, Ca^{2+}
3 influx, ligase activity, or lymphocyte proliferation.

1 13. The method of claim 1, wherein modulation is inhibition of T
2 lymphocyte activation.

1 14. The method of claim 1, wherein the polypeptide is recombinant.

1 15. The method of claim 1, wherein the TRAC1 polypeptide comprises
2 an amino acid sequence of SEQ ID NO:1.

1 16. The method of claim 1, wherein the TRAC1 polypeptide is
2 encoded by a nucleic acid comprising a nucleotide sequence of SEQ ID NO:2.

1 17. The method of claim 1, wherein the compound is an antibody.

1 18. The method of claim 1, wherein the compound is an antisense
2 molecule.

1 19. The method of claim 1, wherein the compound is a small organic
2 molecule.

1 20. The method of claim 1, wherein the compound is a peptide

1 21. The method of claim 20, wherein the peptide is circular.

1 22. A method for identifying a compound that modulates T
2 lymphocyte activation, the method comprising the steps of:

3 (i) contacting a T cell comprising a TRAC1 polypeptide or fragment
4 thereof with the compound, the TRAC1 polypeptide or fragment thereof encoded by a
5 nucleic acid that hybridizes under stringent conditions to a nucleic acid encoding a
6 polypeptide having an amino acid sequence of SEQ ID NO:1; and

7 (ii) determining the chemical or phenotypic effect of the compound upon
8 the cell comprising the TRAC1 polypeptide or fragment thereof, thereby identifying a
9 compound that modulates T lymphocyte activation.

1 23. A method for identifying a compound that modulates T
2 lymphocyte activation, the method comprising the steps of:
3 (i) contacting the compound with a TRAC1 polypeptide or a fragment
4 thereof, the TRAC1 polypeptide or fragment thereof encoded by a nucleic acid that
5 hybridizes under stringent conditions to a nucleic acid encoding a polypeptide having an
6 amino acid sequence of SEQ ID NO:1;
7 (ii) determining the physical effect of the compound upon the TRAC1
8 polypeptide; and
9 (iii) determining the chemical or phenotypic effect of the compound upon
10 a cell comprising the TRAC1 polypeptide or fragment thereof, thereby identifying a
11 compound that modulates T lymphocyte activation.

1 24. A method for identifying a compound capable of interfering with
2 binding of an TRAC1 polypeptide or fragment thereof, the method comprising the steps
3 of:
4 (i) combining an TRAC1 polypeptide or fragment thereof with an E2
5 ubiquitin-conjugating enzyme polypeptide and the compound, wherein the TRAC1
6 polypeptide or fragment thereof is encoded by a nucleic acid that hybridizes under
7 stringent conditions to a nucleic acid encoding a polypeptide having an amino acid
8 sequence of SEQ ID NO:2; and
9 (ii) determining the binding of the TRAC1 polypeptide or fragment thereof
10 to the E2 ubiquitin-conjugating enzyme polypeptide.

1 25. The method of claim 24, wherein the TRAC1 polypeptide or
2 fragment thereof has ligase activity.

1 26. The method of claim 24, wherein the E2 ubiquitin-conjugating
2 enzyme polypeptide is selected from the group consisting of Ubc5, Ubc7, and Ubc8.

1 27. The method of claim 24, wherein the TRAC1 polypeptide or
2 fragment thereof and the E2 ubiquitin-conjugating enzyme polypeptide are combined
3 first.

1 28. The method of claim 24, wherein the reaction is performed *in vitro*.

1 29. The method of claim 24, wherein the TRAC1 polypeptide or
2 fragment thereof and the E2 ubiquitin-conjugating enzyme polypeptide are expressed in a
3 cell.

1 30. The method of claim 29, wherein the cell is a yeast cell.

1 31. The method of claim 30, wherein the TRAC1 polypeptide or
2 fragment thereof is fused to a heterologous polypeptide.

1 32. The method of claim 24, wherein the binding of the TRAC1
2 polypeptide or fragment thereof to the E2 ubiquitin-conjugating enzyme polypeptide is
3 determined by measuring reporter gene expression.

1 33. An isolated complex comprising a TRAC1 polypeptide or fragment
2 thereof bound to an E2 ubiquitin-conjugating enzyme polypeptide, wherein the TRAC1
3 polypeptide or fragment thereof is encoded by a nucleic acid that hybridizes under
4 stringent conditions to a nucleic acid encoding a polypeptide having an amino acid
5 sequence of SEQ ID NO:2.

1 34. The complex of claim 33, wherein the E2 ubiquitin-conjugating
2 enzyme polypeptide is selected from the group consisting of Ubc5, Ubc7, and Ubc8.

1 35. A method of modulating T lymphocyte activation in a subject, the
2 method comprising the step of administering to the subject a therapeutically effective
3 amount of a compound identified using the method of claim 1.

1 36. The method of claim 35, wherein the subject is a human.

1 37. The method of claim 35, wherein the compound is an antibody.

1 38. The method of claim 35, wherein the compound is an antisense
2 molecule.

1 39. The method of claim 35, wherein the compound is a small organic
2 molecule.

1 40. The method of claim 35, wherein the compound is a peptide.

1 41. The method of claim 40, wherein the peptide is circular.

1 42. The method of claim 35, wherein the compound inhibits T
2 lymphocyte activation.

1 43. A method of modulating T lymphocyte activation in a subject, the
2 method comprising the step of administering to the subject a therapeutically effective
3 amount of a TRAC1 polypeptide, the polypeptide encoded by a nucleic acid that
4 hybridizes under stringent conditions to a nucleic acid encoding a polypeptide having an
5 amino acid sequence of SEQ ID NO:1.

1 44. The method of claim 43, wherein the TRAC1 polypeptide
2 comprises an amino acid sequence of SEQ ID NO:1.

1 45. A method of modulating T lymphocyte activation in a subject, the
2 method comprising the step of administering to the subject a therapeutically effective
3 amount of a nucleic acid encoding a TRAC1 polypeptide, wherein the nucleic acid
4 hybridizes under stringent conditions to a nucleic acid encoding a polypeptide having an
5 amino acid sequence of SEQ ID NO:1.

1 46. The method of claim 45, wherein the TRAC1 nucleic acid
2 comprises a nucleotide sequence of SEQ ID NO:2.